CZECHOSLOVAKIA / Human and Animal Physiology (Normal and
              Pathological). Digestion.

Abs Jour   : Ref Zhur - Biologiya, No 13, 1958, No. 60421

Author   : Flusser, J.; Chvojkova, V.; Kozicka, V.
Inst   : Not given
Titlo   : Relation Between the Salivary Glands and Vitamin B
             Complex. The Role of Saliva in Vitamin B_{12} Utilization

Orig Pub   : Ceskosl. gastroenterol a vyziva, 1957, 11, No 2, 117-130

Abstract   : No abstract given

Card 1/1

FLUSSER, J.; CHVOJKOVA, V.; KOZICKA, V.

Relationship between saliva and vitamin B12. (Contribution to the problem of the intrinsic factors). Cas.lek.cesk 100 no.7:199-205 17 F '61.

1. I. interni odd. Bulovky, prednosta primar MUDr. L. Symon. Statni sanatorium, reditel MUDr. F. Zavodny.

(VITAMIN B12)   (SALIVA chem)

KOUBA, K.; STAFOVA, J.; NEVARILOVA, A.; FLUSSER, J.; Clinic of
Infectious Diseases, Faculty of Gen. Medicine, Charles University
(Infekcni Klinika Fak. Vseob. Lek. KU), Prague 8 - Bulovka, Head
(Prednosta) Prof Dr J. PROCHAZKA; Internal Department, Hospital
(Interni Odd. Nemocnice) Prague 8 - Bulovka, Head (Primar) Dr V.
SYMON.

"Acquired Toxoplasmosis Imitating Mental Disorders and Myocarditis."

Abstract /Authors' English summary modified_7: A case of a 15 year
old girl who developed behavior disorders, severe depression ,
suicidal intentions and cardiac affections is described. Toxo-
plasmatic etiology was confirmed by a skin test and a rise of the
titre of complement-fixing antibodies. After treatment the titre
declined and the patient recovered. Toxoplasmatic infection in
the etiology of acute, acquired and congenital, mental disorders
is discussed. 1 Figure, 12 Western, 6 Czech, 3 Russian references.
1/1
                                        (Ms. rec. Feb 66).

- 29 -

PROKAPALO, I.S., kand. sel'khoz. nauk; TREGUBENKO, M.Ye.
        [Trehubenko, M.IA.], kand. sel'khoz. nauk; ARTYUKHOV,
        Y.K., kand. sel'khoz. nauk; KRYACHKO, P.G.[Kriachko,
        P.H.], st. nauchn. sotr.; MAKODZEBA, I.O., kand. sel'-
        khoz. nauk; SIDENKO, I.O., kand. biol. nauk; SUSIDKO,
        P.I., kand. biol. nauk; REPIN, A.M.[Riepin, A.M.], kand.
        sel'khoz. nauk; LOGACHOV, M.I.[Lohachov, M.I.], kand.
        sel'khoz. nauk; OSTAPOV, V.I., kand. sel'khoz. nauk;
        ZAPOROZHCHENKO, O.L., kand. sel'kh.nauk;FLYAGIN,A.D.[Fliahin,A.D.],
        kand. ekon. nauk; KANIVETS', I.D., st. nauchn. sotr.;
        SKRIPNIK, P.S.[Skrypnyk, P.S.], red.; GULENKO, O.I.
        [Hulenko, O.I.], tekhn. red.

        [Advanced practices in growing corn] Peredovi metody vy-
        roshchuvannia kukurudzy. 2., perer. i dop. vyd. Kyiv,
        Derzhsil'hospvydav, URSR, 1962. 231 p.   (MIRA 17:1)

KOGAN, Emmanuil Rafailovich[Kohan, E.R.], kand. ekon. nauk; FLYAGIN,
Anatoliy Denisovich[Fliahin, A.D.], nauchnyy sotr.; ZADONTSEV,
A.I., akademik, zasl. deyatel' nauki Ukrainskoy RSR, red.;
LIVENSKAYA, O.I.[Livens'ka, O.I.], red.; GLUSHKO, G.I.
[Hlushko, H.I.], tekhn. red.

[Increase of labor productivity and wages in corn growing]
Pidvyshchemmia produktyvnosti ta oplata pratsi na vyroshchu-
vanni kukurudzy. Dnipropetrovs'k, Dnipropetrovs'ke knyzhkove
vyd-vo, 1961.   24 p.   (MIRA 15:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy
(for Flyagin). 2. Direktor Vsesoyuznogo nauchno-issledovatel'-
skogo instituta kukuruzy (for Zadontsev).
    (Ukraine—Corn (Maize)) (Ukraine—Agriculture—Labor productivity)

FLYAGIN, P.N., inzhener-polkovnik

Train radio operator-plotters. Vest. protivovozd. obor.
no.5:61-62 My '61.   (MIRA 14:7)
          (Radiotelegraph--Study and teaching)

FLYAGIN, V.A.

AVERKOV, S.K.; ANIKIN, V.I; BRAVO-ZHIVOTOVSKIY, D.M.; GAPONOV, A.V.; OREKHOVA,
M.T.; YERGAKOV, V.S.; KOPYREV, V.A.; MILLER, M.A.; FLYAGIN, V.A.

Diode oscillator noise source in the three-centimeter band. Radiotekh.
i elektron 1 no.6:758-771 Je '56.   (MIRA 10:1)
        (Oscillators, Electron-tube—Noise)
             (Wave guides)

The operation of a test noise generator of the 3-centimeter range which utilizes the
shot effect of a concentric diode as a noise source is described.
   Increased effectiveness in the generator diodes was obtained by switching it to the
high-resistance slot line containing one of the arms of the wave-guide slot T-joint.
   Matching in the direction of the generator was accomplished by two different methods.
The absorber was introduced into the wave-guide arm which is opposite the output, and
the absorber was replaced by a short circuited loop.
   It was observed that matching took place only by the absorption of energy in the gen-
erator proper. In both cases, the zone of matching and emission were evaluated in the
article as well as the value of the spectral noise power. The spectral noise power was
linearly regulated by varying the plate current.
   While operating from 450-600 kT_0, the current attained a value of 15 ma. (T_0 equals
300 degrees K and R equals Boltzmann's constant.)

FLYAGIN, V. A.; PANKRATOVA, T. B.

Experimental study of methods for the formation of trochoidal
electron beams by photographing electron trajectories. Izv.
vys. ucheb. zav.; radiofiz. 5 no.5:956-962 '62.
(MIRA 15:10)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri
Gor'kovskom universitete.

(Electron optics)

L 20652-66
ACC NR: AP6007637   SOURCE CODE: UR/0141/66/009/001/0135/0145

AUTHOR: Mel'nichenko, A. A.; Flyagin, V. A.

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Experimental investigation of large-space-charge trochoidal beams shaped in electric and magnetic crossed fields

SOURCE: IVUZ. Radiofizika, v. 9, no. 1, 1966, 135-145

TOPIC TAGS: electron tube, trochoidal beam, cross field tube

ABSTRACT: Field and potential variations in the interaction space caused by a trochoidal beam were determined by a method involving a thin ribbon-type probing beam (D. L. Reverdin. J. Appl. Physics, 1951, 22, 257). The experimental tube was so designed that the driving parameter was $f = 9$; the tube had a 2-mm wide ribbon Ta cathode coated with LaB_6. Maximum current was 25-30 ma; velocity spread in the beam was kept within 4%. Distribution of the electric-field strength and potential in the anode-cathode gap was determined by the above experimental method

Card 1/2   UDC: 621.385.001

L 20652-66

ACC NR: AP6007637

0

(curves supplied). It was found that: (1) The electric-field strength at beam boundaries varies linearly with the current; with stronger magnetic fields, the electric-field-strength curve becomes steeper (with $H = 420$ oe and beam current $i = 20$ ma, the field strength above the beam was larger by 33% than with $i = 0$); (2) The anode-cathode potential and the beam kinetic energy decrease when the space charge appears; with high current values, the potential difference between the lower beam boundary and the cathode plate approaches zero; (3) Beam position in the inter-electrode space depends on current; with heavier currents, the beam center moves toward the anode. Orig. art. has: 6 figures and 3 formulas.

[03]

SUB CODE: 09 / SUBM DATE: 08May65 / ORIG REF: 006 / OTH REF: 004

ATD PRESS: 4224

Card 2/2 BK

L 31124-66   EWT(1)   IJP(c)   AT

ACC NR: AP6011454   SOURCE CODE: UR/0109/66/011/004/0731/0740

AUTHOR: Flyagin, V. A.; Pankratova, T. B.   30

ORG: none   29

                                                                            B

TITLE: Shaping trochoidal electron beams in long-optics systems

SOURCE: Radiotekhnika i elektronika, v. 11, no. 4, 1966, 731-740

TOPIC TAGS: SHF tube, electron beam, electron field interaction

ABSTRACT: The results are reported of a theoretical and experimental investigation
of the shaping of trochoidal electron beams in crossed E- and H-fields when the
electron velocities have small spread and their rotational energy is high; the
electric field is constant, and the magnetic varies slowly along the electron-optical
system. The results of numerical solution of the equations describing travel of
electrons in the shaping region are compared with the results of calculations
based on an adiabatic approximation. It is found that the above systems permit
shaping trochoidal beams having high rotational energy of electrons, low drift speed,
and small velocity spread in the beam, $\Delta v/v_{av} \approx 1\%$. The experiments have shown
that there are no dynamic processes in the beam if the cathode is operated under
limited-temperature conditions. The relative velocity spread depends on cathode
conditions and remains constant throughout the intermediate region. The adiabatic

Card 1/2   UDC: 539.124.18

L 31124-66

ACC NR: AP6011454

approximation yields reliable results even with fairly abrupt change of the magnetic field, $\Delta H/H_{av} \approx 0.25$. "The authors wish to thank I. M. Bleyvas for his help in solving problems on a special analog computer." Orig. art. has: 8 figures and 4 formulas.

[03]

SUB CODE: 09 / SUBM DATE: 09Dec64/ ORIG REF: 008 / OTH REF: 002/   ATD PRESS:4239

Card 2/2 CC

ACC NR: AP7004911

SOURCE CODE: UR/0109/66/011/012/2254/2257

AUTHOR: Antakov, I. I.; Gaponov, A. V.; Malygin, O. V.; Flyagin, V. A.

ORG: none

TITLE: The use of induced cyclotron emission of electrons for generating and amplification of electromagnetic oscillations

SOURCE: Radiotekhnika i elektronika, v. 11, no. 12, 1966, 2254-2257

TOPIC TAGS: maser, maser theory , cyclotron frequency, cyclotron resonance, electron beam, electromagnetic wave

ABSTRACT:
The design characteristics and the results of an experimental investigation of devices termed cyclotron resonance masers because of induced cyclotron emission are discussed. The cyclotron emission is caused by the interaction of a trochoidal electron beam with a traveling electromagnetic wave (either direct or backward with respect to the electron beam) at a frequency corresponding to the normal Doppler effect, i.e., at $w = w_n (1 \pm (v_0/v_{ph}))^{-1}$, where v_0 is the mean electron velocity, and v_{ph} is the phase velocity of waves in the direction of the mean electron velocity. A schematic drawing of an M-type cyclotron resonance maser (with crossed E and H fields), designed to operate in the 8-mm waveband, is shown in Fig. 1. The interaction space in this maser is formed by the anode (3) and the cathode plate (2) both of which act as conductors in a plane
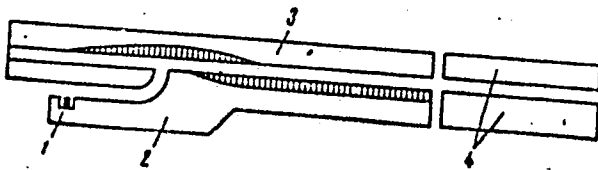
Card 1/3

UDC: 621.373

ACC NR: AP7004911

Fig. 1. Schematic drawing of the cyclotron resonance maser

1 - Cathode; 2 - cathode plate; 3 - anode; 4 - collector.

comb-shaped two-wire line. Dimensions of the comb-shaped line are chosen so as to assure the propagation, in the operating frequency range, of a symmetrical E wave with $v_{ph} \approx 0.8 \, c$, where c is the speed of light in vacuum.

The basic characteristics of the backward wave maser (oscillator) are shown in Figs. 2 and 3. The oscillation frequency of the maser is proportional to the magnetic field strength and approaches the cyclotron frequency of electrons. A change in output power in the tuning range is determined chiefly by a change in the stored rotating energy of the beam electrons. The highest efficiency of the backward wave maser was fixed at 10% (P_{out} = 800 w_1 at I_0 = 0.6 amp, and U_{anode} = 14 kv) without regeneration. The direct wave maser (amplifier), according to preliminary experiments, had an efficiency of about 25% for an output power of 750 w and a gain of 10 db. The amplifier band width, as determined by the width of the cyclotron resonance line, was about 300 Mc. ; Orig. art. has: 2 figures and 1 formula.

Card   2/3
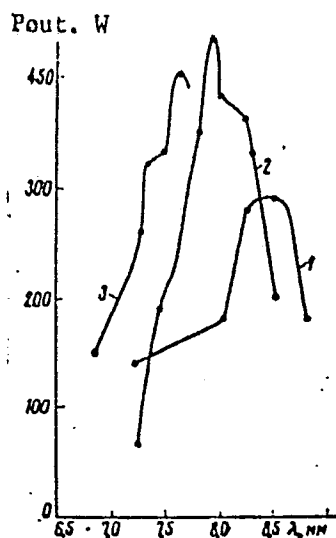
[JR]

ACC NR: AP7004911

Pout. W

Fig. 2. Dependence of the maser generated power on wavelength at $I_0 = 0.4$ amp

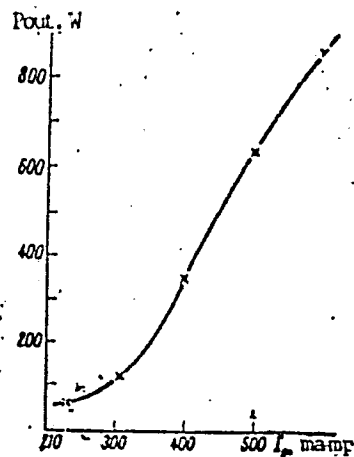1 - $U_{anode} = 10$ kv; 2 - $U_{anode} = 11$ kv, 3 - $U_{anode} = 12$ kv.

Pout. W

SUB CODE:20 / SUBM DATE: 27Jan66/ ORIG REF: 008/
OTH REF: 002/ ATD PRESS: 5115

Fig. 3. Dependence of the generated power on the beam current at $U_{anode} = 14$ kv and $\lambda = 7.9$ mm

Card 3/3

DZHELEPOV, V.P.; KAZARINOV, Yu.M.; GOLOVIN, B.M.; FLYAGIN, B.V.

Experimental investigation of neutron-nucleon and neutron-deuteron
interactions in the 380--590 Mev energy range. Izv.AN SSSR Ser.fiz.
19 no.5:573-588 S-O '55.   (MLRA 9:4)

1.Institut yadernykh problem Akademii nauk SSSR.
        (Cosmic rays) (Nuclear physics)

USSR/Nuclear Physics - Meson production

FD-3272

Card 1/1   Pub. 146 - 31/44

Author   : Dzhelepov, V. P.; Oganesyan, K. O.; Flyagin, V. B.

Title   : Formation of neutral pi-mesons in (n-p) collisions for effective
               energy of neutrons of 590 Mev

Periodical   : Zhur. eksp. i teor. fiz., 29, No 6(12), Dec 1955, 886-889

Abstract   : The authors discuss apparatus consisting of telescope detector of
               gamma quanta, convertor, target, scatterer, neutron source, tele-
               scope detector of protons, telescope monitor, and filter, which were
               used in the experiments under consideration. They present the graph
               describing the energy distribution of the neutrons, and give various
               expressions for the cross-sections of pimesons in the reaction (n,p)
               and of hydrogen for various angles $(80^{\circ}, 90^{\circ})$. Nine references: e.g.
               Yu. M. Kazarinov, B. D. Balashov, V. A. Zhukov, B. M. Pontecorvo,
               G. I. Selivanov, all in Otchet IYaP AN SSSR, 1954.

Institution: Institute of Nuclear Problems, Academy of Sciences of the USSR [IYaP
             AN SSSR]

Submitted   : August 2, 1955

FLYAGIN, V.B.

USSR/Physics - Neutrons

Card 1/2   : Pub. 22 - 12/60

Authors   : Dzhelepov, V. P.; Kazarinov, Yu. M.; and Flyagin, V. B.

Title   : Exchangeable dispersion of neutrons of 380 Mev energy over deutrons and the spinning relationship of exchanging forces

Periodical : Dok. AN SSSR 100/4, 655-658, Feb 1, 1955

Abstract   : Experiments with (n-p) and (n-d) - dispersing systems are described. The experiments were intended to establish the relationship between the number of protons recoiling under a certain angle, mainly under angle $\theta = 0°$, and the number of neutrons in a beam of a diffuser (plane or heavy water with an equal number of hydrogen or deutercum particles). Otherwise the ratio $N_i^o(\theta)/N_L^r(\theta)$, was sought where $N_i^r(\theta)$ is

Institution : Acad. of Sis., USSR, Institute of Nuclear Problems

Presented by : Academician L. A. Artsymovich, December 9, 1954

Periodical : Dok. AN SSSR 100/4, 655-658, Feb 1, 1955

Card 2/2 : Pub. 22 - 12/60

Abstract : proportional to the difference of exchangeable cross-sections of the (n-p) and (n-d)-collisions, and for the given angle is determined as follows: $N_1^p(\theta) = K[\sigma_{np}(\theta) - \sigma_{nd}^{odd}(\theta)]$. Seven references: 5 USSR and 2 USA (1951-1954). Graphs.

PLYAGIN, V. B.

Formation of neutral π mesons in first collisions at an effective neutron energy of 590 m...

Rind.

FLYAGIN, V. B.

6934
EXPERIMENTAL INVESTIGATION OF NEUTRON-NUCLEON
AND NEUTRON-DEUTERON INTERACTION IN THE
ENERGY REGION 380-590 MEV. V. P. Dzhelepov, Yu. M.
Kazarinov, B. M. Golovin, V. B. Flyagin, and V. I. Satarov
(Institute of Nuclear Problems of the Academy of Sciences
of the U.S.S.R., Moscow). Nuovo cimento (10) 3, Suppl. No.
1, 61-79(1956). (In English)

Data on the nuclear interaction of particles in antisym-
metric states were obtained from experimental scattering
data of identical nucleons. Elastic scattering data of (n,p)
and (n,d) reactions were investigated. (F.S.)

FLYAGIN, V. B.

/9

FORMATION OF NEUTRAL π MESONS BY NEUTRONS IN
DEUTERIUM AND COMPLEX NUCLEI. V. P. Dzhelepov,
K. O. Oganesyan, and V. B. Flyagin. Joint Institute of Nu-
clear Research. Laboratory of Nuclear Problems. 1957.
(In Russian)

Results are given of measurements, at 90° angle, of γ-
quanta yield from π° meson fission induced by ~ 590 Mev
neutrons in deuterium. The full cross sections of π°-meson
formation in (n-d) and (n-n) collisions were found to be
$\sigma_{nd}^{\pi} = (7.4 \pm 2.0) \times 10^{-28}$ cm² and $\sigma_{nn}^{\pi} = (1.7 \pm 0.5) \times 10^{-28}$
cm². Data are also given on the relative γ yield from π°
mesons formed on various elements. The relation of γ
yield is close to the function $A^{\%}$. (To be translated. The
translation will be announced in NSA when available.) (tr-
auth)

FLYAGIN, V.B.

AUTHOR
TITLE

DZHELEPOV, V.P., OGANESYAN, K.O., FLYAGIN, V.B.
The Production of Neutral Pions By Neutrons On a Deuteron and On Complicated Nuclei.
(Obrazovaniye neytral'nykh π-mesonov neytronami na daytone i slozh-nykh yadrakh -Russian)

56-4-6/52

PERIODICAL

ABSTRACT

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 4, pp 678-681 (U.S.S.R.)

The paper under review contains the results of measurements of the total cross sections of production of neutral pions at collisions of neutrons with neutrons and deuterons, as well as data on the yields of γ-quanta at the decay of neutral pions (which had been produced by neutrons on nuclei of different elements). The most interesting of these experiments is the investigation of the production of neutral pions at collisions of neutrons with neutrons, because this reaction had not been discovered so far.

Production of neutral pions on deuterium: In order to investigate this process of production, difference experiments were carried out at targets of D_2O and H_2O. Cylinders of safety glass were used as containers for the heavy and for the normal water. The γ-quanta produced at the decay of the neutral pions were recorded by a telescope consisting of scintillation counters and of a Cerenkov detector. The measurements conducted by the authors of the paper under review led to the following result: $(\sigma_{nd}^{\pi^0} - \sigma_{np}^{\pi^0})/\sigma_{np}^{\pi^0} = 0.30\pm0.04$. With the aid of this ratio it is possible to find from the known cross section $\sigma_{np}^{\pi^0}$ the difference of the cross section of production of π^0-mesons at (nd)-and (np)-collisions:

Card 1/2

The Production of Neutral Pions By Neutrons On a Deuteron   56-4-6/52
and On Complicated Nuclei.

$\sigma_n^{\pi o}(d-p) = (1.7\pm0.5) \cdot 10^{-27} cm^2$. Furthermore it is possible to determine
the cross section of production of neutral pions at (nd)-collisions:
$\sigma_{nd}^{\pi o} = (7.4\pm2.0) \cdot 10^{-27} cm^2$. If the coupling of the nucleons in the deuteron
is neglected, then the difference $\sigma_n^{\pi o}(d-p)$ represents the cross section
of production of neutral pions at collisions of neutrons with neutrons
$\sigma_{nn}^{\pi o}$; this cross section is exactly what the investigations described
in the paper under review attempted to find.
Production of neutral pions by neutrons on complicated nuclei: In analogy
to the investigations described above the authors of the paper under re-
view determined the relative output of γ-quanta at the decay of neutral
pions which had been produced at collisions of neutrons of 590 MeV with
nuclei of Be,C,Al,Cu,Sn,Pb, and U. The thus obtained experimental depen-
dence of the output of γ-quanta on the atomic weight is in agreement
for the elements from C to Cu with the formula $\left[(A-Z)\sigma_{nn}^{\pi o}+Z\sigma_{np}^{\pi o}\right]A^{-1/3}A^{2/3}$,
The neutral pions are produced mainly on the surface nucleons of the
nucleus. (1 reproduction, 1 chart).

ASSOCIATION   Unified Institute of Nuclear Research.
PRESENTED BY
SUBMITTED
AVAILABLE   19.11.1956
Card 2/2   Library of Congress.

AUTHOR:
·TITLE:

KISELEV, V.S., FLYAGIN, V.B.   56.5 3/5#
The Energy Distributions of Neutrons Which Are Emitted at Bombing
of Beryllium By Protons of the Energy of 680 MeV.
(Energeticheskiye raspredeleniya neytronov, ispuskayemykh pri bom-
bardirovke berilliya protonami s energiyey 680 MeV. Russian).

PERIODICAL:

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 5, pp 962-964
(U.S.S.R.)

ABSTRACT:

The paper under review describes one of the experiments on the in-
vestigation of the main properties of those bundles of fast neutrons
which are produced at the bombing of a beryllium target by protons
of 680 MeV. The targets of a thickness of 2,5 cm were affixed within
a chamber of the dynchrocyclotron. The experiments were conducted
for the exit angles of the neutrons of $\theta = 0°$ and $\theta = 18°$ with re-
spect to the direction of the protons falling on the target. The
energy distributions of the neutrons were investigated by determin-
ing the energy spectra of the recoil protons (which were emitted
at the elastic n-p-scattering). The measurements were conducted main-
ly by means of the difference method. The sources of errors and the
necessary corrections are briefly discussed. The energy distribu-
tion as obtained from these experiments is represented in a diagram.
At $\theta = 0°$ a maximum is situated at 600 MeV, thus 80 MeV below the
upper boundary of the spectrum. This is connected with the distri-

Card 1/3

56-5 -3/55

The Energy Distributions of Neutrons Which Are Emitted at Bombing of Beryllium By Protons of the Energy of 680 MeV.

bution of the primary proton bundle over different energies. In the case under consideration in the present paper there remains, as result of the p-n-exchange interaction, a proton with low energy, instead of the neutron, in the nucleous. As result of the effects of the Pauli principle, the probability of this process must decrease considerably. It is possible that the plural collisions start to play a considerable rôle (and also such collisions in which a part of the energy is carried away by a third particle). All these statements are only of qualitative character. If the energy of the primary protons increases from 480 MeV to 680 MeV, then there appears in the energy spectrum of the neutrons a second maximum in the energy range of 100 - 400 MeV. This maximum is caused mainly by the neutrons which are emitted at the following reactions: $p + p \longrightarrow \pi^+ + n + p$; $p + n \longrightarrow \pi^0 + n + p$; $p + n \longrightarrow \pi^+ + n + n$. (In this connection, these nucleons are produced on the nucleons of the beryllium nucleon) Finally, the paper under review enumerates experimental facts which confirm the facts discussed above. (1 reproduction).

Card 2/2

Joint Inst. Nuclear Research.

21(7)

AUTHORS: Kiselev, V. S., Oganesyan, K. O.,
Poze, R. A., Flyagin, V. B.   SOV/56-35-3-52/61

TITLE: New Measurements of the Spectrum of Neutrons Which are
Formed During the Bombardment of Be by 680 MeV Protons
(Novyye izmereniya spektra neytronov, obrazuyushchikhsya
pri bombardirovke Be protonami 680 MeV)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 3, pp 812 - 814   (USSR)

ABSTRACT: In the course of the work forming the subject of this paper
it was possible, because a magnetic field was used for the
analysis of the recoil protons with respect to their momenta,
to do without an admixture of positive or negative mesons
within the entire energy range investigated. Measurements
were carried out by means of this new method for the angle
of emission of $0°$ of the neutrons. Main attention was
directed to the high energy part of the spectrum, knowledge
of which is necessary for the purpose of carrying out most
of the work in connection with the bundles. The scheme of
the experiment is illustrated by means of a schematical
drawing. A neutron bunch impinged upon a polyethylene- and

Card 1/3

New Measurements of the Spectrum of Neutrons Which
are Formed During the Bombardment of Be by 680 MeV   SOV/56-35-3-52/61
Protons

a graphite target. The effect on hydrogen was determined
as the difference of these effects on these targets. When
calculating the spectrum the energy losses of the protons
in the targets and in the air, as well as the astigmatism
of the magnetic system were taken into account. The results
obtained by measuring the neutron spectrum after taking all
necessary corrections into account are shown in form of a
diagram. The same diagram also shows previously obtained
data. This energy spectrum has 2 maxima at about 275 and
620 MeV. The spectral range of from 100 to 500 MeV contains
a small admixture of protons, which are emitted in the
reaction $n + p \rightarrow \pi^0 + n + p$ as well as in the reaction
$n + p \rightarrow \pi^- + p + p$. The reasons for the occurrence of 2
maxima in the neutron spectrum were discussed by V. S.
Kiselev and V. B. Flyagin (Ref 1). The authors thank
V. P. Zrelov for his valuable advice during the discussion
of the results obtained. There are 2 figures and 9 refer-
ences, 4 of which are Soviet.

Card 2/3

New Measurements of the Spectrum of Neutrons Which   SOV/56-35-3-52/61
are Formed During the Bombardment of Be by 680 MeV
Protons

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (United
                Institute for Nuclear Research)

SUBMITTED: June 21, 1958

Card 3/3

24(5)

AUTHORS: Flyagin, V. B., Dzhelepov, V. P.,   SOV/56-35-4-4/52
Kiselev, V. S., Oganesyan, K. O.

TITLE: Investigation of the Reaction $n+p \rightarrow \pi^0+d$ at Effective Neutron
Energies of 600 MeV and the Hypothesis of Charge Independence
(Izucheniye reaktsii $n+p \rightarrow \pi^0+d$ pri effektivnoy energii
neytronov 600 MeV i gipoteza zaryadovoy nezavisimosti)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 4, pp 854-867 (USSR)

ABSTRACT: The hypothesis of the charge independence of nuclear forces is
the fundamental basis of the present phenomenological theory;
therefore, experiments carried out for the purpose of checking
the validity of this hypothesis are of great importance. The
authors investigated the reactions $n+p \rightarrow \pi^+ + d$ and $n+p \rightarrow \pi^0+n+p$
with an apparatus of complicated structure, which is described.
The neutrons originated from a synchrocyclotron, the energy
amounted to 600 MeV, and the intensity of the beam was
$3 \cdot 10^4 cm^{-2} sec^{-1}$. The experimental order is outlined by figure 1.
The γ-quanta produced by the decay of π^0-mesons were recorded

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Investigation of the Reaction $n+p \to \pi^0+d$ at Effective   SOV/56-35-4-4/52
Neutron Energies of 600 MeV and the Hypothesis of Charge Independence

by means of a telescope of the following structure:
3 scintillation counters (diameter 90, 120 and 125 mm
respectively), before them a lead converter (diameter 90 mm,
thickness 7 mm), and before it the fourth counter. For the
scintillation counters solutions of terphenyl in toluene or
in phenyl-cyclohexane in duralumin - or plexiglass containers
were used. The target consisted of CH_2 or carbon. Recording of
deuterons is carried out by means of a magnetic spectrometer
having a maximum magnetic field strength of 18000 Oe and a gap
width of 60 mm. The detector operated at 1700-2100 V. The
electric plant is shown in figure 2 in form of a block scheme.
In the following, control tests, the γ-telescope, the measuring
results and their utilization, as well as measurement of the
total cross section are dealt with. Finally, the results
obtained are discussed. For the angular distribution at 600 MeV
the authors obtained $(0.220 \pm 0.022) + \cos^2\theta$ (in the c. m. s.)
and a total cross section of

$$(1.5 \pm 0.3) \cdot 10^{-27} \mathrm{cm}^2 \; ; \quad \text{these values are}$$
indicative of the existence of charge independence.

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Investigation of the Reaction n+p → π^++d at Effective   SOV/56-35-4-4/52
. Neutron Energies of 600 MeV and the Hypothesis of Charge Independence

They are compared in a table with those published by Cohn (Ref 2)
and by Meshcheryakov and Neganov (Ref 5). In conclusion, the
authors thank Yu. D. Bayukov, M. S. Kozodayev, A. A. Markov,
A. N. Sinayev, A. A. Tyapkin, L. I. Lapidus, B. M. Pontecorvo
and M. M. Kuznetsov for their advice and collaboration.
There are 8 figures, 3 tables, and 14 references, 7 of which
are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy
(United Institute for Nuclear Research)

SUBMITTED: April 30, 1958

Card 3/3

FLYAGIN, V. B., Candidate Phys-Math Sci (diss) -- "The formation of π^{o}-mesons in the collision of neturons with protons and deuterons, and the hypothesis of charge independence". Dubna, 1959. 12 pp (Joint Inst of Nuclear Res, Laboratory of Nuclear Problems), 160 copies (KL, No 25, 1959, 127)

FLYAGIN, V. B., SHATET, T., BUDAGOV, YU. A., DZHELEPOV, V. P., DZHAKOV, N. I.,
IVANOV, N. I., LEPILOV, V. I., MOSKALEV, V. I.,

"The One-Meter Propane Bubble Chamber in Magnetic Field"

Paper presented at the Intl Conference on High Energy Physics, Rochester, N. Y.
and/or Berkly California, 25 Agu - 16 Sep 1960.

FLYAGIN, V.B., DZHELEPOV, V.P., KISELEV, V.S., OGANFSYAN, K.O.,

"Pion Production in Neutron-Proton Collision at 590 Mev"

paper presented at the Intl Conference on High Energy Physics, Rochester, N.Y. and/or Berkly California, Aug - 16 Sep 1960.

L 8581-65   EWT(m)   BIAAP/AFWL
ACCESSION NR: AP4048496

8/0120/64/000/004/0056/0065

AUTHOR: Budagov, Yu. A.; Dzhelepov, V. P.; Ivanov, V. G.; Lomakin, Yu. F.;
Flyagin, V. B.; Shlyapnikov, P. V.

TITLE: Hydrogasdynamic computation of a mechanism for variation of the pressure
in a large bubble chamber

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1964, 56-65

TOPIC TAGS: hydrogasdynamic computation, bubble chamber, pressure variation
mechanism, construction parameter, pneumonic device

Abstract: The article presents a hydrogasdynamic method for computing the
basic parameters of construction of a bubble chamber and the mechanism for
variation of the pressure, which was used during development of the meter
bubble chamber at the Joint Institute of Nuclear Research. The mathemati-
cal description of the processes of pressure variation within the chamber
and in the system of the pneumonic devices is sufficiently general; conse-
quently, the method described is applicable to the computation of various
constructional schemes and is of practical interest. There are eight fig-
ures, one of which shows the detailed construction of the mechanism for
variation of pressure.

Card 1/2

L 8531-65
ACCESSION NR: AP4048496

ASSOCIATION: Ob"yedinenny"y institut yaderny"kh issledovaniy (Joint Institute of
Nuclear Research)

SUBMITTED: 08Aug63

NO REF SOV: 012

ENCL: 00

OTHER: 007

SUB CODE: RP, MA

JPRS

Card 2/2

ACCESSION NR: AP4018366   S/0120/64/000/001/0061/0062

AUTHOR: Bogomolov, A.V.; Budagov, Yu. A.; Vasilenko, A.T.; Dzhelepov, V.P.;
D'yakov, N.I.; Ivanov, V.G.; Kladnitskiy, V.S.; Lepilov, V.I.; Lomakin, Yu. F.;
Moskalev, V.I.; Flyagin, V.B.; Shetet, T.I.; Shlyapnikov, P.V.

TITLE: Meter-long bubble chamber in a magnetic field

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1964, 61-68

TOPIC TAGS: bubble chamber, meter long bubble chamber, 10 Gev particle
beam, bubble chamber in magnetic field, electromagnet bubble chamber

ABSTRACT: A bubble chamber with a sensitive volume of $1 \times 0.5 \times 0.38$ m is
described. The chamber is intended for studying the particle beams up to 10 Gev
obtained from the OIYaI proton synchrotron. The chamber design was described
earlier (Yu. A. Budagov, et al. International Conference on High-Energy
Acceleration and Instrumentation, Berkeley, 1960); more details are supplied in
the present article. Propane or some other liquid suitable for a particular
experiment may serve as a working fluid. The chamber is placed in a 17-kilo-
oersted magnetic field derived from a 2,200-kw electromagnet. The error in a

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ACCESSION NR: AP4018366

5-Gev/s-pulse measurement, evaluated from multiple scattering in propane, is ± 3.2%. In 1963, the chamber was installed at the output of the magnetic circuit of a π^--meson beam whose energy lies between 4 and 7 Gev. "The authors consider it their duty to thank V. N. Sergiyenko, N. I. Frolov, K. A. Baycher, and the personnel of the experimental shop for their help in building the outfit. The authors are thankful to V. I. Veksler, N. I. Pavlov, and I. V. Chuvilo for their assistance in constructing the magnetic circuit of the π^--meson beam. We are indebted to A. S. Strel'tsov, B. Ye. Gritskov, B. V. Rozhdestvenskiy, and L. N. Fedulov for designing and building the magnet. The authors are deeply grateful to P. Moshkov, V. A. Lebedev, and S. P. Zunin who spent much effort and skill in stages of constructing and aligning the outfit." Orig. art. has: 8 figures.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of Nuclear Studies)

SUBMITTED: 22Mar63   DATE ACQ: 18Mar64   ENCL: 00

SUB CODE: NS   NO REF SOV: 003   OTHER: 002

Card 2/2

ACCESSION NR: AP4033105

AUTHOR: Budagov, Yu. A.; Dzhelepov, V. P.; Ivanov, V. G.; Lomakin, Yu. F.; Flyagin, V. B.; Shlyapnikov, P. V.

S/0120/64/000/002/0046/0050

TITLE: Hydrodynamics of bubble chambers

SOURCE: Pribory* i tekhnika eksperimenta, no. 2, 1964, 46-50

TOPIC TAGS: hydrodynamics, nuclear research, bubble chamber, bubble chamber theory

ABSTRACT: The hydrodynamics of the process of expansion in a typical bubble chamber is mathematically described. The pressure variation along the chamber-neck axis is:

$$\frac{\partial \mathcal{P}}{\partial x} = -\rho \frac{\partial w}{\partial t} \mp \rho w \frac{\lambda_{\Gamma} w}{2D};$$

where w is the velocity of the incompressible (ρ = const) liquid in a constant cross-section $F = \mathcal{I} D^2/4$ tube. After linearization and simplification, the equation yields this solution: $P(t) = \left(P_0 \cos \omega t + P_0 \frac{b}{\omega} \sin \omega t\right) e^{-bt}$. Here, the ratio b/ω

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ACCESSION NR: AP4033105

is a dimensionless parameter that characterizes the role of friction in a bubble chamber. For practical chambers, the condition $b/\omega \ll 1$ can be represented by $(V_0/D^3) \ll 3,000$. The gas expansion (as the pressure changes) occurs simultaneously with the liquid expansion in the chamber. This combined process is also described by a set of equations from which design formulas are derived. The method was used to design a 1-meter bubble chamber in the Joint Nuclear Research Institute. "The authors are indebted to I. A. Charny*y for his attention and numerous useful discussions which greatly helped in formulating and solving some of the problems in the hydrodynamics of transient motion." Orig. art. has: 1 figure and 17 formulas.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Nuclear Research Institute)

SUBMITTED: 01Jun63

SUB CODE: NS

DATE ACQ: 11May64

NO REF SOV: 005

ENCL: 00

OTHER: 002

Card 2/2

BUDAGOV, Yu.A.; DZHELEPOV, V.P.; IVANOV, V.G.; LOMAKIN, Yu.F.;
FLYAGIN, V.B.; SHLYAPNIKOV, P.V.

Hydrogasdynamic calculation of the mechanism of pressure
variation in a large bubble chamber. Prib. i tekh. eksp. 9
no.4:56-65 Jl-Ag '64.
(MIRA 17:12)

1. Ob"yedinennyy institut yadernykh issledovaniy.

BUDAGOV, Yu.A.; DZHELEPOV, V.P.; IVANOV, V.G.; LOMAKIN, Yu.F.; FLYAGIN, V.B.; SHLYAPNIKOV, P.V.

Hydrodynamic study of the operating conditions of bubble chambers. Prib. i tekh. eksp. 9 no.5:55-60 S-O '64.

(MIRA 17:12)

L 29607-66 EWT(m)/T

ACC NR: AT6013376

SOURCE CODE: UR/3202/65/000/511/0001/0024

AUTHOR: Dzhelepov, V. P.; Kiselev, V. S.; Oganesyan, K. O.; Flyagin, V. B.   38

ORG: none   B+/

TITLE: Production of charged pi-mesons in collisions of neutrons with protons at a neutron energy of very nearly 600 Mev   19

SOURCE: Dubna. Ob"yedinennyy institut yadernykh issledovaniy. Doklady, R-2511, 1965. Obrazovaniye zaryazhennykh Pi-mezonov v soudareniyakh neytronov s protonami pri energii neytronov approximately equal to 600 Mev, 1-24

TOPIC TAGS: particle production, pi meson, neutron reaction, proton reaction, collision cross section

ABSTRACT: The energy spectra of the charged pions produced in (n-p)-collisions are measured at angles of 0-150°. A characteristic feature of these spectra is the high concentration of low-energy mesons. The spectral maxima are located at an energy very nearly equal to 60% of the maximum possible energy. An analysis of the energy distributions shows that the partial cross section σ_{01} has a considerable effect on particle production. The total angular distribution of the mesons has a low coefficient of anisotropy and is described by the expression:

$$\left(\frac{d\sigma}{d\Omega}\right)^{\pi^+,\pi^-} = [(1.99\pm0.08)+(0.77\pm0.19)\cos^2\theta]\times(1\pm0.18)\cdot10^{-28}\ cm^2/sterad$$

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L 29607-66

ACC NR: AT6013376

Data on the angular distribution of positively and negatively charged pions show practically no asymmetry. This may be due to the fact that the principal transitions which take place in the production of these mesons at 600 Mev are the (Sp)-transition in σ_{01} and the resonance (Pp)-transition in the partial cross section σ_{11}, which take place independently. The total measured cross section for production of both types of pions is $(1.3\pm0.2)\cdot10^{-27}$ cm^2 which does not contradict the relationship between the cross sections based on the hypothesis of charge invariance and may be used for determining the cross section for production of π-mesons in nucleon-nucleon collisions with a total isotopic spin of: $\sigma_{T=0}^{\pi} = (2.7\pm1.2)\cdot10^{-27}$ cm^2. A comparison of the value found for $\sigma_{T=0}^{\pi}$ with $\sigma_{T=1}^{\pi} = (10.1\pm0.6)\cdot10^{-27}$ cm^2 shows that the effect of nonresonance transitions cannot be disregarded in phenomenological models of meson production in nucleon-nucleon collisions in spite of the predominant part played by resonance processes. The authors thank Yu. M. Kazarinov, L. I. Lapidus and Yu. N. Simonov for discussing the results of this work. Orig. art. has: 8 figures, 4 tables, 14 formulas.

SUB CODE: 20/   SUBM DATE: 22Dec65/   ORIG REF: 011/   OTH REF: 006

Card 2/2   CU

L 47086-65 EWT(m) IJP(c)

ACCESSION NR: AP5007018   S/0120/65/000/001/0024/0027

AUTHOR: Kladnitskly, V. S.; Flyagin, V. B.

TITLE: Shaping a pi-meson beam for a one-meter propane bubble chamber

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1965, 24-27

TOPIC TAGS: bubble chamber, propane bubble chamber, pi meson

ABSTRACT: A magnetic channel is described which permits using the magnetic field of a proton-synchrotron for separating the negative pi-meson beam of 5 Gev/s impulse and ±2% spread. The channel permits: (a) extracting particles with different impulses along the same direction; (b) singling out a narrow interval of secondary-particle impulses; (c) efficient beam focusing in the center of the bubble chamber. The disposition of equipment is shown in Enclosure 1. Quadrupole magnetic lens Q_1 yields a beam of parallel particles; lens Q_2 focuses it at the 2-cm wide and 5-cm high collimator C. Magnet M eliminates dispersed

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L 47086-65
ACCESSION NR: AP5007018

2

particles, and lens Q_3 focuses the beam for the bubble chamber. Parameters of the equipment and characteristics of the pi-meson beam are given. "The authors wish to thank V. P. Dzhelepov for his constant attention and valuable advice." Orig. art. has: 3 figures, 1 formula, and 2 tables.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Nuclear Research Institute)

SUBMITTED: 30Dec63   ENCL: 01   SUB CODE: NP

NO REF SOV: 002   OTHER: 000

Card 2/3

L 00069-66   EWT(m)   DIAAP

ACCESSION NR: AP5021328

UR/0120/65/000/004/0042/0045
539.1.073.3

AUTHOR: Budagov, Yu. A.; Dzhelepov, V. P.; Lomakin, Yu. F.; Flyagin, V. B.; Shlyapnikov, P. V.

TITLE: Hydrodynamics of the resonant bubble chamber

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1965, 42-45

TOPIC TAGS: proton accelerator, particle accelerator component, synchrotron, hydrodynamics, proton resonance

ABSTRACT: The authors proposed earlier that the speed of bubble chambers be increased by the excitation of periodic pressure oscillation within the working substance with frequencies equal to the resonant frequency of the liquid filling the chamber. In the present article, considering the bubble chamber as a special kind of volume resonator, the authors examine more closely the hydrodynamics of the processes of excitation within the liquid of undamped periodic pressure oscillations with the aim of increasing the speed of bubble chambers. The applicability of such chambers in proton synchrotron experiments is discussed. Expressions of practical interest are derived, and they connect the basic con-

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L 00069-66

ACCESSION NR: AP5021328

structive and hydrodynamic parameters of resonant chambers. Results show that there are no essential obstacles to a successful excitation and maintainance of the oscillations. Orig. art. has: 15 formulas and 2 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy, Dubna (Joint Institute of Nuclear Research)

SUBMITTED: 19Jun64   ENCL: 00   SUB CODE: NP, ME

NO REF SOV: 001   OTHER: 001

Card 2/2

L 45092-66   EWT(m)/T

ACC NR: AP6020203   SOURCE CODE: UR/0056/66/050/006/1491/1504

AUTHOR: Dzhelepov, V. P.; Kiselev, V. S.; Oganesyan, K. O.; Flyagin, V. B.

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Formation of charged π-mesons in collisions of 600 Mev neutrons with protons

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1491-1504

TOPIC TAGS: meson, meson interaction, neutron, proton, angular distribution, spectrometer

ABSTRACT: The energy spectra of charged mesons produced in n—p collisons involving 600-Mev neutrons have been measured in a wide range of angles by a multichannel magnetic spectrometer. The spectra are characterized by many low-energy mesons. The peak energy of the spectra is ~ 0.6 from the largest possible value. The angular distribution of $\pi^{\pm}$ mesons in the center-of-mass system is described by the formula

$$(d\sigma^{\circ}/d\Omega^{\circ})_{\pi^{\pm}} = [(0{,}92 \pm 0{,}04) \mp (0{,}052 \pm 0{,}025)\cos\theta + (0{,}36 \pm 0{,}09)\cos^2\theta] \cdot (1{,}00 \pm 0{,}15) \cdot 10^{-28} \text{ cm}^2/\text{sterad.}$$

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L 45092-66

ACC NR: AP6020203

3

The complete cross section of the meson formation was found to be

$$\sigma_{n,p}(\pi^+) = \sigma(\pi_{n,p}^-) = (1.3 + 0.2) \times 10^{-27} \text{ cm}^2.$$

An analysis of the results shows that despite the dominant role of resonance formation of pions in phenomenological studies, the contribution of nonresonance transitions must be taken into account. The authors thank Yu. M. Kazarinov, L. I. Lapidus, and Yu. N. Simonov for discussing the results. Orig. art. has: 6 figures, 15 formulas, and 1 table. [Based on authors' abstract]

[NT]

SUB CODE: 20/   SUBM DATE: 21Jan66/   ORIG REF: 014/   SOV REF: none/   OTH REF: 007/

Card 2/2   blg

S/131/61/000/001/001/004
B021/B058

AUTHORS: Shaposhnikova, A. A., Papakin, Kh. M., Ignatova, T. S.,
             Flyagin, V. G.

TITLE: Production and Test of Casting-ladle Bricks With Addition
             of Chromium-alumina Slag

PERIODICAL: Ogneupory, 1961, No. 1, pp. 3-7

TEXT: Experimental batches of casting-ladle bricks with addition of
chromium-alumina slag (10.95% Cr_2O_3) were manufactured at the Department
of Refractory Materials of the Nizhne-Tagil'skiy metallurgicheskiy kom-
binat (Nizhniy Tagil Metallurgical Combine). The test bricks were fired at
1420°C in an annular kiln. They were tested in the lining of 140 t cast-
ing ladles. The results: 1) Experimental batches of casting-ladle bricks
with an addition of 20 and 28% chromium-alumina slag were manufactured
and tested in 140 t casting ladles. 2) For the production of these bricks,
a special production line with a tube mill must be installed at the
Department of Refractory Materials of the Nizhniy Tagil Metallurgical

Card 1/2

Production and Test of Casting-ladle Bricks
With Addition of Chromium-alumina Slag

S/131/61/000/001/001/004
B021/B058

Combine. 3) The wear of test bricks with 28% chromium-alumina slag amounts
to 4.2 mm per melt, that of bricks with 20% to 4.4 mm and of customary
bricks to 8.1 mm, thus increasing the stability of the casting-ladle
lining from 9.3 melts with customary bricks to 13 to 15 melts with the new
bricks. 4) The increase of the stability of the test bricks by only one
melt results in a saving of as much as 1,000,000 rubles annually. There
are 3 figures, 5 tables, and 6 Soviet references.

ASSOCIATION: Nizhne-Tagil'skiy metallurgicheskiy kombinat im. Lenina
(Nizhniy-Tagil Metallurgical Combine imeni Lenin)
Shaposhnikova, A. A., Papakin, Kh. M; Vostochnyy institut
ogneuporov (Eastern Institute of Refractories)Ignatova, T.S.,
Flyagin, V. G.

Card 2/2

STRELOV, K.K.; MAMYKIN, P.S.; Prinimali uchastiye: BAS'YAS, I.P.;
      BICHURINA, A.A.; BRON, V.A.; VECHER, N.A.; VOROB'YEVA, K.V.;
      D'YACHKOVA, Z.S.; D'YACHKOV, P.N.; DVORKIND, M.M.;
      IGNATOVA, T.S.; KAYBICHEVA, M.N.; KELAREV, N.V.;
      KOSOLAPOV, Ye.F.; MAR'YEVICH, N.I.; MIKHAYLOV, Yu.F.;
      SEMKINA, N.V.; STARTSEV, D.A.; SYREYSHCHIKOV, Yu.Ye.;
      TARNOVSKIY, G.I.; FLYAGIN, V.G.; FREYDENBERG, A.S.;
      KHOROSHAVIN, L.B.; CHUBUKOV, M.F.; SHVARTSMAN, I.Sh.;
      SHCHETNIKOVA, I.L.

      Institutes and enterprises. Ogneupory 27 no.11:499-501
      '62.   (MIRA 15:11)

      1. Vostochnyy institut ogneuporov (for Strelov). 2. Ural'skiy
      politekhnicheskiy institut im. S.M. Kirova (for Mamykin).
                 (Refractory materials--Research)

IGNATOVA, T.S.; FLYAGIN, V.G.; CHUKREYEVA, Ye.I.

Increasing the durability of ladle brick. Ogneupory 28 no.8:
355-360 '63.   (MIRA 16:9)

1. Vostochnyy institut ogneuporov.

IGNATOVA, T.S.; FLYAGIN, V.G.; POPOV, A.D.; CHUKREYEVA, Ye.I.; DIKSHTEYN, Ye.I.;
    NAZAROV, K.S.; MAKARYCHEV, A.R.

    Manufacture and testing of highly resistant ladle firebrick. Ogneupory
    29 no.11:489-495 '64.   (MIRA 18:1)

    1. Vostochnyy institut ogneuporov (for Ignatova, Flyagin, Popov,
    Chukreyeva). 2. Magnitogorskiy metallurgicheskiy kombinat (for Dikshteyn,
    Nazarov, Makarychev).

ZHUKOV, A.V.; FLYAGIN, V.G.; CHEREPANOV, Ye.I.

Introducing rammed siliceous lining for steel-teeming ladles.
Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform.
18 no.11:3-4 N '65.   (MIRA 18:12)

FLYAGINA, A.V.

USSR/ Chemical Technology. Chemical Products and Their   I-7
              Application - Pesticides

Abs Jour   : Referat Zhur - Khimiya, No 4, 1957, 12413

Author   : Flyagina A.V,
Inst   : All-Union Scientific Research Institute of Cotton Growing
Title   : Toxicological Tests of New Preparations for the Control
               of Pests of Cotton and Grasses

Orig Pub   : Itogi rabot Vses. n.-i. in-ta khlopkovodstva, 1954 (1956)
               No 4, 72-75

Abstract   : Study of the effects on chewing pests -- caterpillars of
               cutworm moth (C), cotton- (CO) and winter-crop owlet
               moths (WO), phytonomus larvae and beetles (P) -- of chlor-
               ten, chlorinated camphene (I), chlorten concentrate with
               DDT, chlorindane (II), metaphos (III), thiophos and pha-
               tox. Against caterpillars of C, CO and WO best results
               were obtained with II, against P with I. Against sucking
               pests -- web spinning mite, acacia- and mellon aphids --

Card 1/2   - 37 -

USSR/ Chemical Technology. Chemical Products and Their   I-7
         Application. Pesticides

Abs Jour   : Referat Zhur - Khimiya, No 4, 1957, 12413

         use was made of the same preparations and also of carbo-
         phos I and sulfo-esters of I and II. Most effective is
         III, and other organophosphorus compounds are next best.

Card 2/2   - 38 -

·FLYAGINA, A.V.

USSR / General and Specialized Zoology.   Insects.   P
Insect and Mite Pests.

Abs Jour   : Ref Zhur - Biol., No 10, 1958, No 44800

Author   : Flyagina, A. V.
Inst   : Not given
Title   : Preparations, Tested and for Control of Sucking
Pests on Cotton.

Orig Pub   : Zashchita rast. ot vredit, i bolezney, 1957,
No. 1, 47.

Abstract   : The experiments were carried out by spraying
spider mites twice with preparations at a 0.5%
concentration by means of OUN-4 machine (duster
and sprayer) at an outlay of 1,200 litres/ha on
plots of 0.5 hectares. Toxicity (with correction
for the control) was shown respectively in 5 and
10 days: with 65% photochemical chlorphene- 90%
and 72.6%; with 65% dark chlorphene- 55.7% and

Card 1/2

21

USSR / General and Specialized Zoology.   Insects.   P
          Insect and Mite Pests.

Abs Jour   : Ref Zhur - Biol., No 10, 1958, No 44800

              50%; with 65% chlorthane - 93%, and 75.3%; with
              65% chlorthane with DDT - 75.1% and 47.8%; with
              65% polychlorpinene - 65.8% and 66.9%; with 65%
              polychlorcamphene - 85.6% and 78.5%; with vopha-
              tox, 77% and 10%; with 30% pyophos - 91.5% and
              54%; with ISO (a lime-sulphur decoction) plus a-
              nabasinesulphate in 5 days, 61.2%. Vophatox in
              production experiments was only slightly effec-
              tive against the mite. Metaphos and vophatox re-
              sulted in the death of all the aphids at much
              lower concentrations than anabasinesulphate, but
              in the control of mites they should be used to-
              gether with ground sulfphur. -- A. P. Adrianov.

Card 2/2

FLYAGINA, A.V.

USSR / General and Specialized Zoology - Insects.   P

Abs Jour   : Ref Zhur - Biologiya, No 5, 1959, No. 20891

Author   : Polevshchikova, V.; Flyagina, A.
Inst   : Scientific Research Institute of Cotton
             Cultivation of the Uzbek SSR
Title   : What the Testing of New Chlororganic Pre-
             parations Showed in the Control of Euxoa
             segetum Schiff

Orig Pub   : Khlopkovodstvu, 1958, No 4, 42-44

Abstract   : The results of experiments carried out by
             the Scientific Research Institute of Cotton
             Cultivation of the Uzbek SSR in the dusting
             of cotton plant seeds (CPS) in 1956 are
             cited. The toxicity of aldrin, dieldrin,
             heptachlor and chlorindane [chlordane] was

Card 1/3

USSR / General and Specialized Zoology - Insects.   P

Abs Jour   : Ref Zhur - Biologiya, No 5, 1959, No. 20891

        tested by feeding the larvae of Euxoa
        segetum Schiff. with plants grown from seeds
        dusted with insecticides, by means of placing
        the larvae on such plants. Dusting with 25%
        aldrin (4 kg/centner) decreased the infectivity
        of the young growth of CPS by 94.7-100%.
        The feeding of larvea with 1C-days-old
        growth from seeds dusted with aldrin (30
        kg/t) and 50% dieldrin (2 kg/centner) pro-
        duced the death of 88.8 and 76.9 larvae,
        respectively. The toxicity of other pre-
        parations is weaker. Plants from seeds
        dusted with dieldrin are toxic for the larvae
        during the month when they are most dangerous
        for the cotton plants. In laboratory experi-
        ments with corn, the toxicity of aldrin was

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40

USSR / General and Specialized Zoology - Insects.   P

Abs Jour   : Ref Zhur - Biologiya, No 5, 1959, No. 20891

highest in all cases. Dusting of seeds
with aldrin (1.5 kg/centner) caused the
death of 90-100% of larvae of the II genera-
tion after 72 hours and 94.4% of larvae of
the III generation after 96 hours. In a field
experiment of dusting seeds with aldrin (1.5
kg/centner), the sprouting of seeds was
highest (90%) and the damage inflicted to
young growth was 0.9%; the plants were
highest and had large leaves with an intense
color. The combined insectifungicide of
aldrin and copper trichlorophenolate is
most effective against Euxoa segetum Schiff.
and gummosis upon cotton plants. -- A. P.
Adrianov

Card 3/3

FLYAGINA, A.V., nauchnyy sotrudnik; KOZHAYEVA, K.I., nauchnyy sotrudnik

New preparations for controlling cotton pests. Zashch. rast. ot
vred. i bol. 6 no.9:32-33 S '61.   (MIRA 16:5)

1. Institut zashchity rasteniy Ministerstva sel'skogo khozyaystva
Uzbekskoy SSR, Tashkent.
            (Cotton—Diseases and pests) (Insecticides)

FLYAGINA, I.A.

On the slopes of the Sikhote-Alin' Range. Okhr. prir. na Dal'.
Vost. no.1:23-25 '63.   (MIRA 18:7)

1. Sikhote-Alinskiy gosudarstvennyy zapovednik.

FLYAK, V.

Clustering of Merino sheep as a means of protection against intensive insolation in the South. Vop. ekol. 4:82-84 '62.   (MIRA 15:11)

1. Moskovskaya sel'skokhozyaystvennaya akademiya imeni K.A.Timiryazeva.
    (Caucasus, Northern--Merino sheep) (Solar radiation)
              (Animals, Habits and behavior of)

FLYAK, V., kand.selskokhoz.nauk; BORISENKO, Ye.Ya., doktor sel'skokhoz.nauk, prof., nauchnyy rukovoditel'

Role of the pigmentation of the wool cover in the protection of the organism against excessive ultraviolet radiation. Izv.TSKHA no.4:228-232 '62. (MIRA 15:12)
(Wool) (Ultraviolet rays—Physiological effect)
(Pigments)

FLYAK, V. V.

Flyak, V. V. -- "Constitutional Peculiarities of Sheep of the Stavropol'
Breed and Their Significance in Selection." Moscow Order of Lenin
Agricultural Acad imeni K. A. Timiryazev, Moscow, 1955 (Dissertation
for the Degree of Candidate in Agricultural Sciences)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

FLYAKH, V. S.

MAKUNI, M.A., inzhener; FLYAKH, V.S., inzhener.

Aeronautics in highway surveying. Avt. dor. 2C no.4:26 Ap '57.
(Aeronautics in road construction)   (MLRA 10:6)

S/264/62/000/006/007/008
I064/I242

AUTHORS: Vulis, D.A. and Flyakh, V.S.

TITLE: Helicopters in road survey

PERIODICAL: Referativnyy zhurnal, Vozdushnyy transport. Svodnyy
tom. no.6A, 1962, 31-32, abstract 6A201. (Automob.
dorogi, no.10, 1961, 16-17)

TEXT: Helicopters are utilized mainly in underpopulated and hardly
accessible regions of the USSR, for various research projects and
particularly for air reconnaissance in road surveying. Preliminary
surveys carried out by helicopter include general estimate of the
local geological and hydrological conditions; determination of
competing variables of the general route direction; investigation
of the region along mountain ridges in order to choose the most
suitable saddles and approaches to passes; investigation of narrow
river valleys and mountain canyons in order to decide on route
locations on the one bank or the other; investigation of rivers and
swamps; deciphering of geological details in districts with complicat-

Card 1/2

S/264/6?/000/006/007/008
I064/I242

Helicopters in road survey

ed geological conditions; searching and aerial reconnaissance of
sources of road-building materials; aerial photography and electro-
magnetic and other special technical aerial surveys. The most
common helicopters for road prospecting are the МИ -1 (MI-1); the
МИ -4 (MI-4) and the   ЯК - 24 (YaK - 24) and the light twin-
propeller KAMOV helicopter.

[Abstracter's note: Complete translation.]

Card 2/2

LYAKHIN, V. A.

Synthesis of ferrosilite under hydrothermal conditions. Dokl.
AN SSSR 155 no. 2:346-348 Mr '64.   (MIRA 17:5)

1. Institut geologii geofiziki Sibirskogo otdeleniya AN
    SSSR. Predstavleno akademikom V. S. Sobolevym.

FLYAKSBERGER, B.K., rabochiy; PETROV, G.V., rabochiy; ZAKHAROV, A.P.,
rabochiy.

Centrifugal casting machine for making bimetallic bush bearings.
Biul. tekh. inform. 4 no.5:30 My '58.   (MIRA 11:8)

1. Baza mekhanizatsii tresta No.103.
                    (Centrifugal casting)

Flyantikova, G. V.

AUTHORS   Nazarenko V.A.,Flyantikova, G.V., Lebedeva N.V.,   32-8-1/61
TITLE   Analysis of Pure Metals. Determination of the Arsenic Content.
           (Analiz chistykh metallov. Opredeleniye primesi myshyaka - Russian)
PERIODICAL Zavodskaya Laboratoriya, 1957, Vol 23, Nr 8, pp 891-896(U.S.S.R.)

ABSTRACT   Two methods of the separation of arsenic from the bysic metal are
           described in the paper, for the purpose of its (i.e. of arsenic)
           chemical evaluation. In both cases is recommended the so-called
           "universal" type of the separation of microquantities of arsenic
           from pure metals on further extraction of the diethyldithiocar-
           bamate complex from a strongly acid mixture by chloroform, as
           well as the final determination after the formation of arsenic-
           molybdenum-blue in all cases. Then the process of the separation
           of arsenic from antimony, vanadium, niobium and silicon is des-
           cribed and the use of a siutable apparatus is demonstrated. In
           the case of an analysis of antimony and niobium previous preci-
           pitation of arsenic is recommended is the form of magnesium-am-
           monium-arsenate with a phosphate carrier. In the case of vanadium
           and silicon the separation of arsenic from the corresponding solu-
           tions is directly performed.The process of the determination of ar-
           senic after the extraction by diethyldithiocarbamate acid is des-
           cribed.In this case a freshly prepared solution of diethyldithio-
           carbamihic acid is used for the extraction of arsenic.In that con-
           nection it is pointed out that the application of a chloroform so-
Card 1/2   lution of diethylammonium -diethyldithiccarbamate would be more

Analysis of Pure Metals.Determination of the Arsenic   32-8-1/61
Content.

convenient,but this reagent is at present difficult to obtain.This
method is also applicable to the determination of the arsenic con-
tent of other metals which do not form any diethylcarbamates in
strongly-acid solutions,neither in the presence nor in the absence
of complex producers.
There are 2 tables and 1 illustration and 5 references.

AVAILABLE   Library of Congress.
Card 2/2

AUTHORS: Nazarenko, V.A., Flyantikova, G.V.   32-24-6-2/44

TITLE: Analysis of Pure Metals (Analiz chistykh metallov), The Determina-
             tion of Silicon Admixtures in Some Semiconductor Metals
             (Opredeleniye primesi kremniya v nekotorykh poluprovodnikovykh
             metallakh)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 6, pp 663-666 (USSR)

ABSTRACT: A method of determination is described which is not based upon
             the insulation of microquantities of silicon accompanied by the
             forming of silicon molybdenum-blue and a possible extraction, as
             suggested in some papers, but upon the formation of volatile com-
             pounds of the metals to be analyzed. For antimony: tribromide,
             for gallium: orthooxyquinolate, and for indium: trichloride and
             the oxide for thallium were selected. The boiling temperature of
             the tribromide of antimony is 280°, and by evaporation with hydro-
             bromic acid a complete volatilization of antimony takes place be-
             cause SbBr₃ has a high vapor pressure. The orthooxyquinolate of
             gallium sublimates already below 100°, and at 267° the surplus
             oxyquinoline is volatilized. Indium trichloride is volatilized
             already below 400° and is sublimated completely at 600°, whereas
             thallium is sublimated in form of the oxide during the melting of

Card 1/2

Analysis of Pure Metals. The Determination of Silicon   32-24-6-2/44
Admixtures in Some Semiconductor Metals

its salts with caustic sodium; silicon can then be determined in
the thallium-free alkaline smelt. In connection with the determi-
nation of gallium, indium, and thallium the silicon-molybdic acid
must be extracted, as platinum from the vessel disturbs colorime-
tric determination, whereas possible disturbances by phosphorus,
arsenic, or germanium are eliminated with the aid of citric acid.
If the reagents used are purified from silicon and if the necessa-
ry precautionary measures are taken a correction to the blank test
of $0.5-0.7\gamma$ Si in the antimony analysis and up to 1.5γ Si in galli-
um-, indium-, and thallium analyses can be attained, so that, by
using a calibration curve when working with a photometer or a
photocolorimeter, it is possible to determine silicon up to 0.5γ.
With a weighed portion of 0.5 g of the metal a sensitivity of
$1.10^{-4}\%$ was attained. Detailed instructions concerning the produc-
tion and application of reagents and detailed descriptions of the
analyses carried out are given separately for each of the above
mentioned metals. The results obtained are shown by a table. There
are 1 table, and 7 references, 3 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR
(Institute for General and Anorganic Chemistry, AS Ukrainian SSR)

Card 2/2   1. Silicon--Determination   2. Semiconductors--Analysis   3. Inter-
metallic compounds--Vaporization   4. Intermetallic compounds--Analysis

AUTHORS: Nazarenko, V. A.; Flyantikova, G. V.   SOV/32-24-7-6/65

TITLE: The Analysis of Pure Metals. The Determination of Cadmium
             Impurities in Indium and Thallium (Analiz chistykh metallov.
             Opredeleniye primesi kadmiya v indii i tallii)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7, pp. 801 - 802
             (USSR)

ABSTRACT: Numerous attempts to separate micro amounts of cadmium from
             greater amounts of indium and thallium showed that an ex-
             traction of the pyridine-thiocyanate complex of cadmium by
             chloroform is most favorably used. At pH=5 tartaric acid must
             be added in order to prevent a precipitation of indium hydroxide.
             The thallium thiocyanate, which is difficult to dissolve must
             be filtered out previous to the extraction. In doing this, the
             thallium salt solution must be poured into an excess of thio-
             cyanate solution in order to prevent a coprecipitation of
             cadmium. The experiments showed that by this method 0,05 γ
             of cadmium can quantitatively be separated from 0,5g thallium.
             The disturbing influence of silver, mercury, copper, zinc,
Card 1/2   nickel and cobalt in the determination with dithizon was

The Analysis of Pure Metals. The Determination of Cadmium Impurities in Indium and Thallium   SOV/32-24-7-6/65

removed by the application of cyanide. It is emphasized that the reactants must be purified from copper and that only pure reactants may be used. A procedure for the determination of cadmium in indium and in thallium is described. In order to find the sensitivity and the accuracy of the method, determinations with cadmium - free thallium samples were carried out, a known amount of cadmium being added and then determined. From the results of the analysis given in a table it may be seen that the method yields satisfactory results.
There are 1 table and 1 reference,   which is Soviet.

ASSOCIATION: Laboratoriya Instituta obshchey i neorganicheskoy khimii Akademii nauk USSR (Laboratory of the Institute of General and Inorganic Chemistry, AS UkrSSR)

Card 2/2

NAZARENKO, V.A.; FUGA, N.A.; FLYANTIKOVA, G.V.; ESTERLIS, K.A.

Analysis of pure metals; determination of admixtures of lead and zinc in indium and thallium. Zav.lab. 26 no.2:131-135 '60.
(MIRA 13:5)

1. Institut obshchey i neorganicheskoy khimii Akademii nauk USSR.

(Lead--Analysis)
(Zinc--Analysis)
(Indium)
(Thallium)

S/032/6·/027/011/001/016
B106/B110

AUTHORS: Nazarenko, V. A., and Flyantikova, G. V.

TITLE: Determination of iron microquantities in indium and gallium

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 11, 1961, 1339-1341

TEXT: Two methods of determining iron microquantities in metallic indium and gallium are described in this paper. In the analysis of indium, iron trichloride is extracted from the 7 N hydrochloric solution of the weighed sample by diisopropyl ether. After evaporation of ether, iron is colorimetrically determined. The rhodanide method cannot be applied in this case since indium chloride is partly extracted together with diisopropyl ether and would thus disturb the colorimetric determination of iron in the form of rhodanide. The colorimetric iron determination is, therefore, conducted on the basis of a red, complex cation which, together with orthophenanthroline, forms bivalent iron. The residue obtained by ether evaporation is dissolved in 1 N hydrochloric acid, and mixed with a biphthalate buffer solution (pH 3), a 10% solution of hydroxylamine hydrochloride, a 0.5% aqueous solution of orthophenanthroline, and a 2.5 M

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Determination of iron microquantities ...   S/032/61/027/011/001/016
                                            B106/B110

solution of sodium or lithium perchlorate. Perchlorate of the iron orthophenanthroline complex forms and is extracted with nitrobenzene. The pink coloring of the extract is compared with that of a number of standard solutions produced simultaneously and in the same manner. The above method cannot be used for determining iron in metallic gallium since, under these conditions, gallium chloride is also extracted considerably. In the analysis of metallic gallium, iron is extracted from the 5 N hydrochloric solution of the weighed sample with an isonitroso-phenyl-hydroxylamine solution in chloroform. Iron is not extracted from 7 N or higher hydrochloric solutions. The extract containing iron as cupferronate is evaporated to dryness; the cupferronate is then decomposed by concentrated sulfuric acid and perhydrol. The residue is again treated with perhydrol, evaporated to dryness, dissolved in 1 N hydrochloric acid, and mixed with a 25% solution of potassium rhodanide. After mixing, extraction with isoamyl alcohol is conducted. The coloring of the extract is compared with that of a series of standard solutions obtained simultaneously and in the same manner. Sensitivity and accuracy of the two above methods proved to be satisfactory.

The methods allow a determination of $2 \cdot 10^{-5}\%$ iron in 0.5 g of indium or

Card 2/3

Determination of iron microquantities ...   S/032/61/027/011/001/016
                                              B106/B110

gallium. Requirement for this sensitivity of determination: purity of all
reagents which, in a blank test, must not contain more than a total of
0.'$\int$ of iron. There are 1 table and 1 non-Soviet reference. The
reference to the English-language publication reads as follows: D. W.
Margerum, C. V. Banks, Anal. Chem., 26, 200 (1954).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk
              USSR (Institute of General and Inorganic Chemistry of the
              Academy of Sciences UkrSSR)

Card 3/3

S/073/62/028/002/006/006
B101/B110

AUTHORS: Nazarenko, V. A., Flyantikova, G. V., Lebedeva, N. V.

TITLE: Ionic state of germanium in weakly acid solutions

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 28, no. 2, 1962, 266-267.

TEXT: The range of existence of germanium cations in weakly acid solutions was studied. Experiments were conducted with electromigration and by determining the germanium content in the electrolyte with disulfo phenyl fluorone. 0.001 moles of GeO_2 solutions in a buffer solution (glycocol, biphthalate, veronal which do not form complexes with Ge) were filled into a V-shaped tube with sealed-in platinum electrodes. The upper tube shaft was filled with the same electrolyte but without Ge. Voltage was varied between 30 and 210 v at a constant amperage of 15 ma. Electrolysis took 60 min. Then, the Ge content both in the catholyte and in the anolyte was determined. In order to take diffusion into account, blank tests without current were conducted. Results:

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J

Ionic state of germanium in ...

S/073/62/028/002/006/006
B101/B110

Ge (μg/ml)

pH	in catholyte	in anolyte	blank test
>7	-	only in anolyte	
6.83	4.9	6.1	0.9
5.05	4.6	5.0	0.7
3.12	7.7	7.5	1.0
2.32	4.4	3.8	1.1
1.08	1.3	2.2	0.2

Contrary to published data, weakly acid solutions contained germanium cations in addition to the anions of germanic acids. Their presence explains many analytical reactions of Ge and also their similarity to reactions of other metals of Group IV of the Periodic System. There are 1 figure and 1 table. The most important English-language reference is: D. A. Everest, J. E. Salmon, J. Chem. Soc., 2438 (1954).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR, laboratoriya v Odesse (Institute of General and Inorganic Chemistry AS UkrSSR, Laboratory in Odessa)

SUBMITTED: September 10, 1960
Card 2/2

NAZARENKO, V.A.; FLYANTIKOVA, G.V.

Complex compounds of germanium with chloranilic acid.
Zhur.neorg.khim. 7 no.10:2335-2339 O '62.   (MIRA 15:10)

1. Institut obshchey i neorganixheskoy khimii AN UkrSSR.
                    (Germanium compounds) (Benzoquinone)

NAZARENKO, V.A.; FLYANTIKOVA, G.V.

Color reactions of germanium with organic reagents of the orthodiphenol type. Zhur. anal. khim. 18 no.2:172-177 F '63.

(MIRA 17:10)

1. Institute of General and Inorganic Chemistry, Academy of Sciences, Ukrainian S.S.R., Laboratories in Odessa.

NAZARENKO, V.A.; FLYANTIKOVA, G.V.

Composition and ionization constants of complex polyol germanic acids. Zhur. neorg. khim. 8 no.6:1370-1377 Je '63.

(MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii AN Ukr SSR, laboratorii v Odesse.

(Germanic acid)   (Ionization)

NAZARENKO, V.A.; FLYANTIKOVA, G.V.

Instability constants of dipolyologermanium complexes. Zhur.
neorg. khim. 8 no.10:2271-2275 O '63.   (MIRA 16:10)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.
         (Germanium compounds)   (Alcohols)

NAZARENKO, V.A.; FLYANTIKOVA, G.V.

Volumetric determination of germanium in the form of dipolyol-germanic acids. Ukr. khim. zhur. 30 no.7:762-768 '64

(MIRA 18:1)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR, laboratorii v Odesse.

ACC NR: AP6010053   SOURCE CODE: UR/0032/66/032/003/0267/0269

AUTHOR: Nazarenko, V. A.; Biryuk, Ye. A.; Shustova, M. B.; Shitareva, G. G.;
Vinkovetskaya, S. Ya.; Flyantikova, G. V.

ORG: Institute of General and Inorganic Chemistry, AN UkrSSR (Institut obshchey i ne-
organicheskoy khimii AN UkrSSR)

TITLE: Determination of impurities in tantalum

SOURCE: Zavodskaya laboratoriya, v. 32, no. 3, 1966, 267-269

TOPIC TAGS: tantalum, impurity level, photometric analysis, iron, copper, tin, lead

ABSTRACT: The photometric determination of impurities in tantalum is described. It has
a sensitivity of $10^{-4}\%$ and requires all the precautionary measures used during the
analysis of high-purity metals, including the running of blank experiments under con-
ditions of sample analysis. The photometric determination is preceded by extraction of
the analyzed element (Pb, Cu, Fe, Ni, or Sn) from the tantalum sample, by extraction
during the determination of tantalum in Zr, Bi, and Zn in the form of a fluortantalate
complex, and by determination of chromium after separation of the tantalum by hydolysis.
Lead and cadmium are determined by dithizone after extraction of the lead and cadmium
(in the form of diethyldithiocarbaminates) from acid medium with chloroform. The inter-
fering effect of other elements is eliminated by washing the extract with alkaline

Card 1/2   UDC: 543.7

ACC NR: AP6010053

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solution (pH 12) containing cyanide, tartrate, and diethyldithiocarbaminate. The rhoda-nide method, with extraction of the dyed complex, is used for the determination of iron. Copper is determined by dithizone. The separation of iron and copper from tantalum is made by extraction of their diethyldithiocarbaminate salts. Tin is determined photo-metrically with paranitrophenylfluorone after extraction of the tin from the sulfate medium with chloroform in the form of diethyldithiocarbaminate. This is made similarly to the determination of tin in niobium (N. B. Lebedeva, V. A. Nazarenko, Trudy Komissii po analicheskoy khimii, Izd. AN SSSR, XI, 287, 1960). It is convenient to determine some impurities after separating the tantalum from them. This can be done by the ex-traction of the fluorotantalum complex with ketones (e.g., cyclohexanone) from its solution in HF and H_2NO_3 or H_2SO_4, while Zr, Ti, Bi, and Zn can be determined in the aqueous phase: Zr with phenylfluorone, Bi by the iodide-ketone method, and Zn with dithizone. Chromium is determined with diphenylcarbazide after separation of tantalum by hydrolysis.

SUB CODE: 11,07/ SUBM DATE: none/ ORIG REF: 008

Card 2/2 hs

L 38111-66   EWT(m)/EWP(t)/ETI   IJP(c)   JD

ACC NR: AP6015725   SOURCE CODE: UR/0032/66/032/005/0529/0529

AUTHOR: Flyantikova, G. V.

ORG: Institute of General and Inorganic Chemistry AN UkrSSR (Institut obshchey i neorganicheskoy khimii AN UkrSSR)

TITLE: Determination of arsenic impurities in indium

SOURCE: Zavodskaya laboratoriya, v. 32, no. 5, 1966, 529

TOPIC TAGS: quantitative analysis, arsenic, indium

ABSTRACT: The article describes an acelerated method for determination of arsenic in pure metallic indium. The basis of the determination is the reaction of formation of arsenic-molybdenum blue which is extracted in a layer of isoamyl alcohol. 1 gram of indium is placed in a flask, 30 ml of a 6 N solution of hydrochloric acid are added, and then 0.5 ml of 40% tin chloride in concentrated hydrochloric acid and 2 ml of a 20% solution of potassium iodide. The solution is mixed and the flask is sealed. It is then connected to a capillary charged with an absorbing liquid. The flask is then heated slowly. After dissolving of the metal, the absorbing liquid is transferred to a colorimetric test tube and there are added 1.5 ml of water, 0.3 ml of a 1% aqueous solution of

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L 38111-66

ACC NR: AP6015725

ammonium molybdate, and 0.3 ml of an 0.3% solution of hydrazine sulfate.
The test tube is then heated for 10 minutes in hot water and cooled.
Final determination is by comparison with standards, containing 0.25-3
micrograms of As. The sensitivity of the method is 2.5×10^{-5} As in a
weighed portion of 1 gram of indium. Orig. art. has: none.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 001

Card 2/2

38776

S/194/62/000/005/123/157
D230/D308   /7

26.23/2

AUTHORS: Arifov, U.A., Flyants, N.N., and Ayukhanov, A.Kh.

TITLE: Some properties of secondary ion-neutral emission

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
              no. 5, 1962, 46, abstract 5zh310 (Dokl. AN UzSSR, 1961,
              no. 10, 10-13)

TEXT: In order to determine the energy spectrum of particles leav-
ing the target as neutral atoms, the interaction was investigated
of the complete energy spectrum of Na atoms with Ta surface, arising
as a result of bombardment of an auxiliary Ta target with Na^+ ions.
On the basis of the measurement of energy distribution and critical
energies of Na^+ ions of the secondary neutral-ion emission, the
authors conclude that during the bombardment of solid bodies with
ions, these particles are elastically scattered by atoms both as
positive ions and neutral atoms. Energy distributions of the scatte-
red ions and neutral atoms do not differ substantially from each
other. [Abstractor's note: Complete translation].

Card 1/1

35534
S/020/62/142/006/006/019
B104/B108

No. 7310

AUTHORS: Arifov, U. A., Academician AS Uzbekskaya SSR, Flyants, N. N.,
             and Ayukhanov, A. Kh.

TITLE: Some properties of secondary ionic-neutral emission

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 6, 1962,
             1265-1267

TEXT: Two Ta targets, each surrounded by a collector and a protective
cylinder, were placed in a T-shaped glass container. Target no. 1
(30 by 7 by 0.015 mm) was bombarded with ions generated by surface
ionization of an alkali halide. All charged particles between the two
targets were deflected by the field of a capacitor so that only the neutral
particles emitted from the surface of target no. 1 could reach target
no. 2. Pressure during measurement was between 1 and $3 \cdot 10^{-6}$ mm Hg.
Prior to each measuring series the targets were heated to 2,500°K for
6-8 hours. The maximum energy of the neutral atoms striking target no. 2
by bombarding target no. 1 can be calculated from the relation

Card 1/2

Some properties of secondary...

$$E = E_0 \frac{m_1 - m_2}{m_1 + m_2},$$

same as the resultant maximum energy of the secondary ions leaving target no. 2. (E_0 - energy of incident ion, m_1 and m_2 - masses of target atoms and bombarding ions). The energy distribution of the secondary ions produced by bombarding target no. 2 with secondary ions emitted from target no. 1 is close to the energy distribution of the secondary ions produced by the neutral component. The primary ions undergo elastic scattering from the atoms of the target in the forms of positive ions as well as of neutral atoms. Emission of positive ions was also observed. Their maximum energy was in good agreement with the value computed for elastic scattering. There are 2 figures and 9 references: 7 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: R. M. Chaudry, A. W. Kahn, Proc. Phys. Soc., 61, 526 (1948).

ASSOCIATION: Institut yadernoy fiziki Akademii nauk UzSSR (Institute of Nuclear Physics of the Academy of Sciences Uzbekskaya SSR)

SUBMITTED: June 17, 1961

Card 2/2

ARIFOV, U.A.; FLYANTS, N.N.; AYUKHANOV, A.Kh.

Some properties of secondary neutral ion emission. Izv.AN SSSR.
Ser.fiz. 26 no.11:1414-1418 N '62.   (MIRA 15:12)
                         (Ions)

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D413/D308

AUTHORS: Flyants, N.N., Arifov, U.A. and Ayukhanov, A.Kh.

TITLE: Transient secondary emission processes during bom-
                bardment of films on metals by fast neutral atoms
                of another element

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 2, 1963,
                311-315

TEXT: Although in the study of the interaction of atomic
particles and solid surfaces it is of value to investigate bombard-
ment by neutral atoms as well as by ions, this has been neglected
because of the difficulties of obtaining suitable fast atom beams
and measuring their secondary effects; the experiments that have
been done, such as by Chaudry and Khan, have only given information
on secondary electron emission. The authors have measured the sec-
ondary emission of positive and negative ions from a Ta target both
in the clean state and during deposition of a Na film, bombarded
with either ions or neutral atoms of Na and K of energies up to

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